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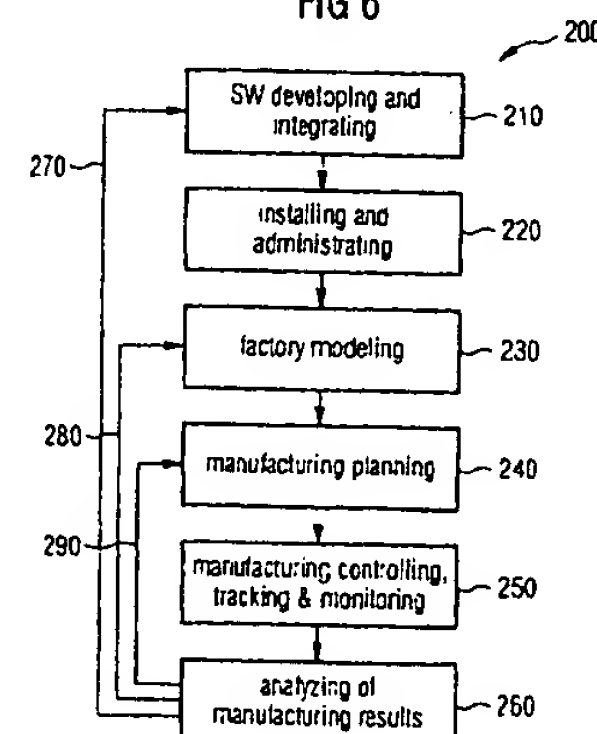
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(54) **Computer integrated manufacturing techniques**

(57) The present invention provides a novel distributed factory system framework including a novel factory automation lifecycle (200) having lifecycle activities for SW developing and integrating (210), installing and administering (220), factory modeling (230), manufacturing planning (240), manufacturing controlling, monitoring and tracking (250) and analyzing of manufacturing results (260). The factory lifecycle comprises framework components. The distributed factory system framework also includes application components and SW building blocks. The framework components are adapted for managing the application components, while the application components are utilized to provide instructions for managing a process such as a wafer fab. The building blocks are adapted for forming or modifying framework and application components. The distributed factory system framework provides computer implemented

methods for integrating processing systems and facilitates process and equipment changes.

FIG 6



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EUROPEAN SEARCH REPORT

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| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|--|--|---|--|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
| X | US 5 495 417 A (MIURA KAZUYUKI ET AL) 27 February 1996 (1996-02-27) * column 13, line 41 - column 15, line 35 * * column 39, line 60 - column 47, line 67; figures 1-7, 89-96 * | 1, 13, 17, 19-24 | G05B19/418 G05B17/02 |
| X | US 5 657 254 A (DUROSS RONALD R ET AL) 12 August 1997 (1997-08-12) * column 4, line 66 - column 7, line 61; figures 1-4 * | 15 | |
| | | | TECHNICAL FIELDS SEARCHED (Int.Cl.7) |
| | | | G05B |
| The present search report has been drawn up for all claims | | | |
| Place of search MUNICH | | Date of completion of the search 27 September 2001 | Examiner Helot, H |
| CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | | | |

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 11 5577

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27-09-2001

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|----------------------------|---------------------|
| US 5495417 A | 27-02-1996 | JP 5266029 A | 15-10-1993 |
| | | JP 6110894 A | 22-04-1994 |
| | | JP 5216896 A | 27-08-1993 |
| | | JP 3140877 B2 | 05-03-2001 |
| | | JP 6252236 A | 09-09-1994 |
| | | JP 3139867 B2 | 05-03-2001 |
| | | JP 6260380 A | 16-09-1994 |
| | | JP 6176994 A | 24-06-1994 |
| | | US 5694325 A | 02-12-1997 |
| | | JP 5151231 A | 18-06-1993 |
| US 5657254 A | 12-08-1997 | US 5508947 A | 16-04-1996 |
| | | US 5220517 A | 15-06-1993 |
| | | CA 2050247 A1 | 01-03-1992 |
| | | CA 2165847 A1 | 01-03-1992 |
| | | CA 2194855 A1 | 01-03-1992 |
| | | US 5329463 A | 12-07-1994 |
| | | US 5497316 A | 05-03-1996 |

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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